

The Impact of READ 180 and System 44 on Student Achievement Scores in Reading

Concept Paper

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by

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Under Brief Review of the Literature (revise and correct title heading), there should be second level headings in alignment with the concept paper.

Introduction

1. Centered on the page
2. Refer to the Concept Paper Template and include key word definition in context of the discussion.

Statement of the Problem

Reaching their full potential should be explained. It appears that students may not advance to the next grade level and could potentially result in becoming a drop-out.

Purpose of the Study

The first sentence should begin with the research methodology (quantitative, qualitative, or mixed method).

Will the study include the entire school or a specific grade(s)?

Research Questions

1. There should be an introduction to the research questions.
 2. Research questions should not be answered with yes or no
 3. The hypotheses does not have an introduction.
- Refer to the Concept Paper Template and Best Practices.

Definition of Key Terms

1. The title should be centered on the page in bold.

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2. Complete sentences should be used.
3. Avoid the use of et al and provide all the author names.
4. Scholastic Reading Inventory (SRI) reflects exact wording submitted to Argosy University. Did you submit a paper to Argosy University? If not, should be revised using your voice.

Brief Review of the Literature

1. The title should be centered on the page in bold.
2. The literature review included works by authors that had opposing views; elaborate on why the authors had opposing views using compare/contrast strategy of writing.
3. The section on theory was comprehensive.

Research Method

Operational Definition of Variables

Measurement

The Research Method section will be expanded to include major elements of the research study. Refer to the Concept Paper Template for additional information such as sample size and how the sample size was determined for example.

Summary

You may want to include further research on the research topic.

Assignment 8 demonstrated completing **all** required parts of the assignment, demonstrates **good** understanding of materials, uses **very** clear and effective expression appropriate to scholarly writing, and has **some** errors in grammar, mechanics, APA form and style, and APA formatting.

A 95% Dr. Oja 12 22 2014

Northcentral University Grading Guidelines – Graduate Scoring

Numerical Points	Letter Grade	Descriptor	Explanation
100-94 93-90	A A-	Excellent	Completes all required parts of the assignment, demonstrates deep understanding of materials, uses very clear and effective expression appropriate to scholarly writing, and has very few or no errors in grammar, mechanics, APA form and style, and APA formatting.
89-87 86 - 83	B+ B	Good	Completes all or most required parts of the assignment, demonstrates good understanding of readings, uses mostly clear and effective expression appropriate to scholarly writing, and has few errors in grammar, mechanics, APA form and style, and APA formatting.
82-80	B-	Fair	Completes most required parts of the assignment, demonstrates some understanding of the readings,

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79-77	C+		and writing is somewhat clear, effective, and scholarly, and has some errors in grammar, mechanics, APA form and style, and APA formatting.
76-73	C	Poor	Completes some required parts of the assignment, demonstrates some understanding of readings, and writing is difficult to understand and unscholarly and has several errors in grammar, mechanics, APA form and style, and APA formatting.
72-0	F	Unacceptable	Completes few required parts of the assignment, demonstrates little understanding of readings, and writing is difficult to understand and unscholarly and has many errors in grammar, mechanics, APA form and style, and APA formatting.

Using the Grading Guidelines for Success

A. The Northcentral University Grading Guidelines are designed to ensure that faculty and students have a shared understanding of assignment quality. Carefully reviewing the guidelines can help you plan and complete your assignments to the best of your ability.

B. The grading guidelines are based on four assignment criteria. Keep these in mind as you complete an assignment:

1. Assignment completion (highlighted in **orange**) – the extent to which you have followed assignment instructions. **Because the paper is a “draft” concept paper and will go through a number of revisions with the Dissertation Chair, the points made in each section of the concept paper were a good foundation. As the concept paper is developed, points made should be expanded to thoroughly validate the research study.**

2. Understanding of materials (highlighted in **green**) – the extent to which you have demonstrated understanding of readings or other materials. **Refer to the Concept Paper Template and Best Practices as well as research textbooks for an understanding of research methodology; reference to the research design is secondary. The research methodology (quantitative, qualitative, or mixed method) should be identified in the sections of the concept paper. Also, concepts such as sample size should also be thoroughly documented; specific instruments to gather data and the significance of the instruments in alignment with the research study; and how each section of the research study should be written.**

3. Expression (highlighted in **blue**) – the extent to which your expression is clear, effective, and appropriate for scholarly writing. **The use of vague sentence structure results in reader confusion as the reader will not know who or what you are referring to. Writing for research is concise.**

4. Grammar, mechanics, APA (highlighted in **purple**) – the extent to which you have used correct grammar, word choice, punctuation, APA form and style, and APA formatting. **Refer to the APA Manual: Chapters 3 and 4 for APA form and style; chapter 6 for citing sources in-text in APA format; and chapter 7 for citing sources on a Reference list in APA format. Also, refer to the document provided on writing an annotated bibliography; a number of the summaries were too long and the use of vague sentencing resulted in reader confusion.**

As stated, purchase an academic writing handbook for consistent use of standard American English conventions.

C. Your instructor will ignore criteria not relevant to an assignment (e.g., discussion posts and reflections need only follow APA formatting for citations and references).

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D. Submission of an assignment that is outside of the page length (or slide number) parameters may result in a request for a re-submission that meets the parameters or a one step reduction of a grade (e.g., from A- to B+), at a faculty member's discretion.

Introduction^[2]

There has been a growing concern in Tennessee with regards to Reading literacy in K-12 public education. The reading needs of middle school readers are being targeted as achievement gaps and the pressure to address these gaps has increased since the implementation of Tennessee Educator Acceleration Model (TEAM). Consequently, school administrators and educators are being held accountable for student achievement on state-mandated assessments, now more than ever, through the TEAM evaluation model. The TEAM rubric factors an educator's effectiveness using up to 50% of student achievement data in Reading literacy, Mathematics, and Science. The need to address these achievement gaps in struggling middle school readers has increased school leaders concern and provided a foundation for restructuring reading instruction.

Common Core Standards have led the way for Tennessee schools to begin seeking scientifically based reading research to support computer-assisted reading interventions. Students who perform below grade level in reading are considered to be at high-risk for failure across content areas and inevitably in danger of dropping out of school (Sternberg, Kaplan, & Borck, 2007). State officials and educators in Tennessee are committed to ensuring high school students graduate prepared for college or the workforce. School leaders are responding to the literacy and high school drop out crisis by implementing supplemental reading programs that foster motivation, comprehension building, and decoding strategies. The driving force behind the ELA Common Core Standards is to support the implementation of remedial programs that positively impact students at-risk of reading failure.

Statement^[3] of the Problem

Reading is an essential life skill, and when students are unable to read the effects are life-altering (Burke, Hagan-Burke, Kwok, & Parker, 2009). Tennessee^[4] was the fastest improving state from 2011-2013 (www.tn.gov, 2014). However, evaluation of disaggregated data from Tennessee Value-Added Assessment System (TVAAS) and Tennessee Comprehensive Assessment Program (TCAP) Reading Achievement scores in Clarksville Tennessee, revealed student populations in both regular and special education are making substantially less progress than the state Standard for Academic Growth in Reading (Tennessee Department of Education, 2014; TVAAS, 2014). Furthermore, students' Normal Curve Equivalent (NCE) gains revealed students consistently performed below expectation in reading and were not demonstrating overall gains due to the inability to read grade level content area material.

The Clarksville-Montgomery County School System (CMCSS) continues to show a decline in reading scores, which reflect high numbers of at-risk students reading below grade level (TVAAS, 2014). Furthermore, achievement gaps in reading and the pressure to address these gaps by the state has increased rapidly since the implementation of Tennessee's new teacher evaluation model. Therefore, the problem is the steady decline in TCAP Reading Achievement scores across CMCSS resulting in students in grades six to eight not reading at grade level and reaching their full potential (Tennessee Department of Education, 2014; TVAAS, 2014).

Computer-assisted intervention programs have shown to improve reading literacy (Saine, Lerkkanen, Ahonen, Tolvanen, & Lyytinen, 2011). Additionally, research has revealed that a constructivist computer-assisted learning model increases students'

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knowledge construction and retention. In an effort to improve TCAP Reading Achievement scores in a local middle school in Clarksville^[5], Tennessee, school administrators have implemented two computer-assisted reading intervention programs to address at-risk student gaps in reading literacy.

Purpose^[6] of the Study

The purpose of this quasi^[7]-experimental study is to improve Tennessee Comprehensive Assessment Program (TCAP) Reading Achievement scores in a local middle school using two Scholastic computer-assisted reading intervention programs to address at-risk student gaps in reading literacy. The measure of growth will be determined by the NCE mean gains experienced by students on the TCAP Reading assessment. A particular interest is to determine if at-risk students at Kenwood Middle School experience reading skill growth by participating in the Scholastic *Read 180* and *System 44* programs as measured by the expected mean NCE gain score.

Research^[8] Questions

The^[9] following research questions were developed after review of current literature, they are:

- Q1.** Does^[10] the utilization of Scholastic *System 44* have a statistically significant impact on the TCAP Reading assessment NCE mean gain scores of Kenwood Middle School students participating in the Scholastic *System 44* model as compared to students participating in the Scholastic *Read 180* model?
- Q2.** Does the utilization of Scholastic *System 44* have a statistically significant impact on TCAP Reading assessment NCE mean gain scores of Kenwood Middle

School males participating in the Scholastic *System 44* model as compared to males participating in the Scholastic *Read 180* model?

Q3. Does the utilization of Scholastic *System 44* have a statistically significant impact on TCAP Reading assessment NCE mean gain scores of Kenwood Middle School females participating in the Scholastic *System 44* model as compared to females participating in the Scholastic *Read 180* model?

Q4. Does the utilization of Scholastic *System 44* have a statistically significant impact on TCAP Reading assessment NCE mean gain scores of the majority of Kenwood Middle School students participating in the Scholastic *System 44* model as compared to the majority of students participating in the Scholastic *Read 180* model?

Q5. Does the utilization of Scholastic *System 44* have a statistically significant impact on TCAP Reading assessment NCE mean gain scores of the minority students at Kenwood Middle School participating in the Scholastic *System 44* model as compared to minority students participating in the Scholastic *Read 180* model?

Hypotheses

Collecting Scholastic *System 44* and *Read 180* student data will serve to test the hypotheses. Each question addresses a null hypothesis with no expectation of a statistically significant relationship and an alternate hypothesis that proposes that a statistical difference does exist between the independent variables – Scholastic *System 44*, *Read 180*, gender, and ethnicity; and the dependent variable – student NCE assessment scores.

H1₀. There is no statistically significant difference in the NCE mean gain scores of Kenwood Middle School students participating in the Scholastic *System 44* model as compared to students participating in the Scholastic *Read 180* model.

H1_a. There is a statistical difference in the NCE mean gain scores of Kenwood Middle School students participating in the Scholastic *System 44* model as compared to students participating in the Scholastic *Read 180* model.

H2₀. There is no statistically significant difference in the NCE mean gain score of Kenwood Middle School male students in the Scholastic *System 44* model as compared to male students participating in the Scholastic *Read 180* model.

H2_a. There is a statistical difference in the NCE mean gain score of Kenwood Middle School male students in the Scholastic *System 44* model as compared to male students participating in the Scholastic *Read 180* model.

H3₀. There is no statistically significant difference in the NCE mean gain score of Kenwood Middle School female students in the Scholastic *System 44* model as compared to female students participating in the Scholastic *Read 180* model.

H3_a. There is a statistical difference in the NCE mean gain score of Kenwood Middle School female students in the Scholastic *System 44* model as compared to female students participating in the Scholastic *Read 180* model.

H4₀. There is no statistically significant difference in the NCE mean gain score of the majority of Kenwood Middle School students in the Scholastic *System 44* model as compared to the majority of students participating in the Scholastic *Read 180* model.

H4_a. There is a statistical difference in the NCE mean gain score of the majority of Kenwood Middle School students in the Scholastic *System 44* model as compared to the majority of students participating in the Scholastic *Read 180* model.

H5₀. There is a statistical difference in the NCE mean gain score of the minority students at Kenwood Middle School in the Scholastic *System 44* model as compared to minority students participating in the Scholastic *Read 180* model.

H5_a. There is a statistical difference in the NCE mean gain score of the minority students at Kenwood Middle School in the Scholastic *System 44* model as compared to minority students participating in the Scholastic *Read 180* model.

Definition^[11] of Key Terms

Average Yearly Progress (AYP). An individual state's measure of yearly progress toward achieving state academic standards. "Average Yearly Progress" is the minimum level of improvement that states, school districts, and schools must achieve each year (Tennessee Department of Education, 2014).

Blended learning. The concept, blended learning, can have multiple meanings depending on the context in which it is being used to frame a viewpoint or conduct research. This study defines blended learning as the integration of asynchronous online only and traditional face-to-face collaborative and interactive learning activities, which can be experienced in either online only learning environments or traditional classroom settings (Barbour^[12] et al., 2011; Dias & Diniz, 2014).

English Language Arts (ELA) Common Core Standards. These^[13] standards define what students should understand and be able to do in English language arts and literacy. Standards set high expectations for all students to ensure that Tennessee

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graduates are prepared for the rigorous literacy demands of college and career (TNCORE, 2014).

Lexile^[14] Scores. A measure of a student's achievement in reading as it relates to varying difficulty level of books is referred to as lexile scores (Kim, Samson, Fitzgerald, & Hartry, 2010)

Literacy^[15] Rich Environments. A setting that stimulates students who are at-risk to participate in language and literacy activities in their daily lives thereby giving them the beginning understandings of the utility and function of oral and written language (Sternberg et al., 2007).

NCE Score. A normal curve equivalency (NCE) is a standardized score developed by the RMC Research Corporation in the 1980's for use by the United States Office of Education in interpreting the achievement scores of large groups of students. Normal curve equivalent scores are based on a normal distribution with a mean of 50, standard deviation of 21.06, and 99 equivalent interval units. NCE scores from 1-34 are considered below average, 35-65 are considered average, and 66-99 are considered above average (Tennessee Department of Education, 2014; TVAAS, 2014).

Scholastic^[16] Read 180. An intensive reading intervention program designed to help raise reading achievement scores in grades 4 through 12 using technology, explicit instruction, and independent reading assignment groups (Scholastic, Inc., 2014).

Scholastic^[17] Reading Inventory (SRI). A computer-adaptive assessment designed to measure how well readers read literature and expository text of varying difficulties (Scholastic, Inc., 2014)

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Scholastic^[18] **System 44.** An intensive foundational reading intervention program that helps educators meet the needs of beginning readers grades 3 through 12 using technology and explicit instruction, which focuses on writing, language, speaking, and listening (Scholastic, Inc., 2014).

Small^[19] **Group Instruction.** A student rotation among three different stations, at which they spend 20-minutes receiving small-group instruction, working at computers enhanced with software, and independent reading or writing (Scholastic, Inc., 2014).

Brief^[20] **Integrative Literature Review**

There has been a growing concern in Tennessee with regards to Literacy in K-12 public education. Literacy needs of middle school readers are being targeted as achievement gaps and the pressure to address these gaps has increased since the implementation of the new evaluation model initiated by Race to the Top in Tennessee. Computer-assisted intervention programs have shown to improve reading literacy (Saine et al., 2011). Additionally, research has revealed that a constructivist computer-assisted learning model increases students' knowledge construction and retention (Saine et al., 2011).

Several^[21] different reading **approaches** have been successful due to a combination of **approaches** during whole group, small group, and differentiated instruction (Taylor & Watson, 2013; Vernon-Feagans, Kainz, Hedrick, Ginsberg, & Amendum, 2013). Many **approaches**, however, have not been successful revealing only 9% of eighth graders who were considered at-risk students met the basic requirements set forth by the National Assessment of Educational Progress (NAEP) in reading (NAEP, 2013); this number, coupled with the pressure from Race to the Top initiatives in Tennessee, has made addressing at-risk students in reading a high priority.

The purpose of this paper^[22] is to present a brief review of the literature relevant to the proposed study. This literature review is organized into the following sections: (a) an overview of necessary reading skills and strategies, (b) targeted reading interventions, and (c) an introduction to computer-assisted instruction. Each section provides research-based evidence, which supports the components of a constructivist computer-assisted learning model that make up the proposed study.

Necessary Reading Skills and Strategies

Not all students become proficient readers and those students not at proficiency often fall into the category of tier two or three interventions for at-risk readers. The National Reading Panel (2001) defined five reading skills in which a reader must master in order to become proficient readers. The five reading skills include phonological awareness, phonics, fluency, vocabulary, and comprehension. Students who are at-risk in reading benefit from explicit and systematic intervention organized around fluency, comprehension^[23], and phonemic awareness (Roberts, Vaughn, Fletcher, Stuebing, & Barth, 2013; Vaughn et al., 2012).

Reading Skills

Phonemic awareness. Phonemic awareness is the ability to identify and recognize similar sounds in different words. This^[24] skill is important for students to be able to pronounce unknown words. This^[25] can be very confusing for students because some sounds represent two or more letters. Phonics is the ability to understand how letters are linked to sounds and spelling patterns. In one study, researchers found that significant gains in fluency, vocabulary, and comprehension were achieved with intensive phonological remediation (Fälth, Gustafson, Tjus, Heimann, & Svensson, 2013).

Fluency and Vocabulary. Fluency is the ability to read accurately, quickly, and effortlessly. Apart^[26] of becoming a fluent reader is being able to read sight words and learning between 2,500 and 3,000 new words each year. The ability to read fluently and understand unfamiliar vocabulary was found to be closely linked to improved reading (Solis, Miciak, Vaughn, & Fletcher, 2014). At-risk readers typically struggle with sight words and retention of newer more difficult words (Little, McCoach, & Reis, 2014). Additionally, poor fluency results in poor comprehension (National Reading Panel, 2001; Solis et al., 2014).

Comprehension. Comprehension helps at-risk readers make connections between existing knowledge and new information from the text (Solis et al., 2014). Comprehension of text allows the reader to draw inferences, ask questions, and create a visual of the text. When readers are able to comprehend what they are reading, readers can synthesize information across texts and reading experiences (National Reading Panel, 2001).

Reading Strategies

The addition of five reading strategies, intended to compliment the Reading Panel's list, includes classroom arrangement, connecting the relationship between reading and writing, ensuring students are reading appropriate leveled texts, providing opportunities for choice and collaboration, and providing students with prompt feedback (Allington, 2005). At-risk readers often have trouble implementing the aforementioned skills; together, the 10 components of effective reading assist at-risk students in becoming better readers (Allington, 2005; National Reading Panel, 2001). Research

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reveals that intensive reading remediation significantly improves student literacy (Fälth et al., 2013).

Target Reading Interventions

Addressing the needs of at-risk readers is necessary, but how the instruction takes place varies. There are a number of studies^[27], which detail the importance of early reading intervention. In an experimental study^[28], designed to deliver extensive independent reading intervention, researchers analyzed the effects a reading only intervention program had on student achievement (Little et al., 2014). Researchers reported that targeted reading interventions had a significant impact on struggling readers (Fisher, 2014; Little et al., 2014). In another study, Williams (2014) reported a need to deliver focused reading intervention time^[29], requiring reluctant readers to engage in sustained reading. Due to the number of studies supporting the benefits of computer-assisted learning and the efficacy of reading interventions on student literacy, it is reasonable to hypothesize a positive connection between the two.

There are a number of computerized reading intervention programs that have been studied and analyzed to determine the level of efficacy on improving student literacy. At-risk readers had higher reading scores using computer-assisted technology than compared to struggling readers who did not have the same technology access (Amendum, Vernon-Feagans, & Ginsberg, 2011). The Targeted Reading Intervention (TRI) program was designed to deliver real time, long-distance reading intervention coaching to teachers using web-cam technology to assist in providing 15-minute reading interventions. In a supporting study conducted by Fälth, et al. (2013), a computerized reading intervention program was utilized to determine the effectiveness of three specific areas of reading

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literacy, which included reading comprehension. Furthermore, in an additional study, researchers used a computer-assisted program called Carry-A-Tune (CAT) to analyze its effectiveness as a reading intervention for struggling middle school students (Biggs, Homan, Dedrick, Minick, & Rasinski, 2008). Researchers found that there was a significant improvement in both reading comprehension and instruction using CAT (Biggs et al., 2008).

Scholastic's Read 180. In a quantitative study, Cheung and Slavin (2013) reported that *Read 180* produced positive, but unexceptional effects on the reading skills of struggling readers compared to that of traditional face-to-face instruction. Additional research supported that the *Read 180* program lacked conclusive evidence to support the efficacy of the program (Parker, Holland, & Jones, 2013). In a qualitative study designed to investigate how English Language Learners (ELL) responded to the *Read 180* program, researchers reported that the remedial program had no significant impact (Wu & Coady, 2010). Researchers concluded that the *Read 180* model did not offer cultural knowledge, experiences, and was unable to respond to unique cultural needs of ELL students (Wu & Coady, 2010). Additionally, Kim et al. (2010) reported on the casual effects *Read 180* had on measures of vocabulary and reading fluency. The study included two groups of students who were randomly assigned to either the *Read 180* program or a less structured after-school reading program. Researchers reported that there was no significant difference between students participating in the *Read 180* program and that of the after-school program on measures of vocabulary, fluency, and comprehension (Kim et al., 2010). Furthermore, researchers reported the study yielded

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no statistically significant differences in student achievement score between the groups (Kim et al., 2010).

In a later study, Kim, Capotosto, Hartry, and Fitzgerald (2011) conducted an independent randomized control study, which evaluated the efficacy of *Read 180* on measures of vocabulary, reading comprehension, spelling, and fluency. The study was designed very similarly to the Kim et al. (2010) study. Contrary to the Kim et al. (2010) study, Kim et al. (2011) reported that there was indeed a positive and statistically significant impact on student scores when utilizing the *Read 180* program. Specifically, researchers reported that *Read 180* students outperformed other student scores in the school district by 8.43% on reading vocabulary and 9.66% on reading comprehension [30](Kim et al., 2011). Although Kim et al. (2011) reported significantly higher outcomes in regards to comprehension; the two studies shared consistent results showing no significant impact on spelling and fluency. However, in a contrasting study, researchers reported that during the first year of a three-year study, sixth-grade students outperformed comparison students with statistical differences on measures of reading comprehension and fluency (Roberts et al., 2013). Additionally, Walcott, Marett, and Hessel (2014) reported that the use of a computer-assisted intervention program resulted in significant fluency gains.

Despite recent research results revealing the inconsistent impact *Read 180* has on student literacy and achievement, research supports the hypotheses that computer-assisted technology could have a significant and consistent impact on middle school student achievement scores in Reading Literacy. Additionally, researchers who have successfully utilized the Scholastic *Read 180* and *System 44* remedial reading programs

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have reported statistically significant student literacy results (Kim et al., 2011; Papalewis, 2004). In fact, researchers have reported that although students in online reading interventions showed significant gains overall, middle school students who required reading interventions needed ongoing support (Roberts et al., 2013). Furthermore, Vaughn et al. (2012) reported that although computer-assisted reading interventions have shown significant impact on student achievement, the efficacy of these programs beyond middle school could negatively impact other content areas.

The Efficacy of Computer-Assisted Technology

Much of the literature reviewed revealed computer-assisted web-based technology has a significant impact on student learning. According to Fletcher, Tobias, and Wisher (2007), there is a need to link web-based learning models with specific learning needs. The researchers reported a need for technology-integrated instruction based on affordability and the educational value web-based learning has on student learning perceptions and performances (Fletcher et al., 2007). In one study, researchers presented a web-based framework for the implementation of learning environments, which promoted online learning using a variety of web-based devices (Cabrera-Lozoya, Cerdan, Cano, Garcia-Sanchez, & Lujan, 2012). Researchers reported that the use of web-based learning tools had a significant impact on student achievement, engagement, and satisfaction^[31] (Cabrera-Lozoya^[32], et al., 2012). Further review of the literature revealed an overwhelming number of studies supported the findings from the Cabrera-Lozoya et al. (2012) study (McBrian, Jones, & Rui, 2009; Patterson & McFadden, 2009; Roberts et al., 2013; Samruayruen, Enriquez, Natakatoong, & Samruayruen, 2013).

Additional studies reviewed revealed that computer-assisted learning programs also had a significant affect on student participation and student achievement. In a single-subject, across-participants design, researchers analyzed whether a computer-assisted reading intervention program increased literacy in inattentive struggling readers compared to students identified as attentive struggling readers (Walcott et al., 2014). Researchers of the Walcott et al. (2014) study reported that a computer-assisted approach to learning was significantly more effective at providing intervention to inattentive readers as compared to their counterparts. Furthermore, researchers reported that students who learned through computer-assisted technology typically had learning outcomes at least as good as students who participated in face-to-face instruction (Irvin, Hannum, de la Varre, & Farmer, 2010).

Supporting Theories

Learning theories contribute to understanding the value and usefulness of computer-assisted learning in education (McCarthy, 2010). Educators review behavioral and cognitive theories to guide in the design, development, and implementation of lesson activities. Social theorists suggest that learning takes place through the interaction of new knowledge and through collaborative student activities (Jin Nam, 2012; Sargeant, Curran, Allen, Jarvis-Selinger, & Ho, 2006; Walcott et al., 2014). Constructivists suggest that students create meaning and knowledge from the experiences they share in a traditional classroom setting, both individually and with their peers (Sargeant et al., 2006). Scholars typically agree that learning involves building on prior learning experiences, which can be individualized for each student (Dalgarno, 1996; Sargeant et al., 2006).

Computer-assisted, or computer-mediated learning, theories are derived primarily from social and constructivist theories and techniques (Dalgarno, 1996). One formal learning strategy that explicitly uses social learning theory is small-group learning, including problem-based learning and computer-assisted modules. Constructivism can support this learning strategy through direct instruction, computer-based instruction, and through real-world connections. Computer-based instruction emphasizes collaborative learning and targets individual student needs and skill sets (Cabrera-Lozoya, et al., 2012; Fletcher et al., 2007). More specifically, endogenous constructivism focuses on the individual student's knowledge construction, and places the teacher in the role of facilitator and support (Dalgarno, 1996). Computer-based learning supports an endogenous constructivist approach to individualized learning.

Limitations

However^[33], Graf and Kinshuk (2006) warn that although web-based technology has proven successful in the field of online learning education there are a number of student learning variables, which must be considered before school administrators begin implementing computer-assisted remedial programs. Other researchers have reported that a computer-assisted remedial program must incorporate cultural diversity from multiple perspectives in order to be effective (Whitford, 2011; Wu & Coady, 2010). Researchers Huang, Lin, and Haung (2012) address Graf and Kinshuk (2006) concerns through a study, which analyzed the mediating processes between variables of student learning and learning online. Researchers from the Huang et al. (2012) study reported that online participation was a mediating construct between learning efficacy and student

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performance. However, the researchers did acknowledge that it is difficult to determine the degree of influence online participation has on student learning and performance.

Summary

The current research reviewed provides insight into the impact of computer-assisted technology and the importance of early reading intervention. Additionally, several learning theories, such as cognitive evaluation theory and constructionist epistemology provided a framework for future research. A combination of theories can be used to conduct an investigation into the efficacy of a reading intervention program using computer-assisted technology such as Scholastic's *Read 180* and *System 44* programs. Inconsistent and contrasting research into the efficacy of computer-based remedial programs underscores the need to conduct further research dedicated to identifying effective or ineffective variables associated with learning with technology.

Research^[34] Method

This study will evaluate the effectiveness of the implementation of two computer-assisted Scholastic reading programs, *Read 180* and *System 44*. Additionally, this study will compare the two remedial programs to determine which Scholastic program had the most effect on middle school students' reading skills growth. The purpose of this^[35] quasi-experimental study is to determine if students at-risk in Reading and Language Arts experience greater reading achievement scores from the reading intervention Scholastic *Read 180* or from Scholastic *System 44* program as determined by the NCE mean gains experienced by students on the TCAP Reading assessment.

The Scholastic *Read 180* model will be implemented to^[36] at-risk students during the 2014-2015 school year at one of the six middle schools in the Clarksville-Montgomery County School System. The data collected from this study will be

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disaggregated to determine which Scholastic reading intervention model had a statistically significant impact on reading skills development for students with Reading and Language Arts learning deficiencies. Additionally, this quasi^[37]-experimental study will use archival quantitative data to determine if the implementation of Scholastic *Read 180* and Scholastic *System 44* intervention models had a statistically significant impact on reading skills development of middle school students identified as having a Reading and Language Arts gap. The variables gender and ethnicity will also be examined^[38] within the dependent variable. It is not clear what the sample size will be. Need justification for the research method and design.

Operational^[39] Definition of Variables

The independent variables for this study are the use of a blended learning approach to teaching and learning in the classroom. Learning and teaching in this environment will include the integration of asynchronous online only and traditional face-to-face collaborative and interactive learning activities. The independent variables are identified as Scholastic *Read 180* and *System 44* reading intervention models. The measure of student achievement is the dependent variable in this study.

Independent variable – Scholastic *Read 180*. The blended learning environment where the Scholastic *Read 180* reading intervention model is being implemented will be considered a nominal variable.

Independent variable – Scholastic *System 44*. The blended learning environment where the Scholastic *System 44* reading intervention model is being implemented will be considered a nominal variable.

Dependent variable – academic achievement. Students' academic achievement is a construct that will be derived from the NCE mean gains experienced by students on the TCAP Reading assessment. The student academic construct is a ratio variable varying from 0 to 100%.

Measurement^[40]

Data for this research will be collected at the beginning, middle, and end of the school year. The measurement instrument used in this study will be teacher made summative assessments, district benchmark assessment, and Scholastic computer-assisted data tracking. Additionally, ordinal values will be used to compare the dependent variable within groups.

The independent variables will be the Scholastic *Read 180* and *System 44* reading intervention models. Student participants will be determined by using students' lexile scores and TCAP Reading Achievement NCE gains and, therefore, cannot be randomly assigned to a particular model. All student participants assigned to the *Read 180* or *System 44* classroom models will have a teacher trained in the Scholastic *Read 180* and *System 44* model. The Scholastic *Read 180* instructional model consists of the following components: three 20-minute rotations between computer-assisted led instruction, independent reading, and small group instruction. Additionally, the Scholastic *System 44* instructional model consists of the following components: two 30-minute rotations between computer assisted led instruction and small group instruction.

The depended variables will include end of year TCAP Reading Achievement NCE gains, ethnicity, and gender. Inferential statistics in the form of an unpaired t-Test and one sample t-Test will be used to compare the reading achievement means

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experienced between the two reading intervention groups. Descriptive statistics will be utilized to identify the dynamics of the sample and provide an overview of achievement data.

Summary

Reading is an essential life skill, and when students are unable to read the effects are life-altering (Burke, et al., 2009). Achievement gaps in student Reading Achievement scores and the pressure to address these gaps by the state has increased rapidly since the implementation of Tennessee's new teacher evaluation model. Therefore, the problem is the steady decline in TCAP Reading Achievement scores across CMCSS resulting in students in grades six to eight not reading at grade level and reaching their full potential (Tennessee Department of Education, 2014; TVAAS, 2014). Computer-assisted intervention programs have shown to improve reading literacy (Saine et al., 2011). Additionally, research has revealed that a constructivist computer-assisted learning model increases students' knowledge construction and retention. The purpose of this quasi[41]-experimental study is to improve Tennessee Comprehensive Assessment Program (TCAP) Reading Achievement scores in a local middle school using two Scholastic computer-assisted reading intervention programs to address at-risk student gaps in reading literacy. Additionally, the measure of growth will be determined by the NCE mean gains experienced by students on the TCAP Reading assessment.

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Appendix A

Annotated Bibliography

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The purpose of this study was to evaluate the efficacy of kindergarten and first-grade teachers and students participating in a classroom delivered reading intervention program called Targeted Reading Intervention (TRI). The TRI was designed to deliver long-distance coaching using laptop computers and webcam technology. The authors predicted that struggling students from schools implementing TRI would have higher scores than struggling students from control schools. Overall, the authors found their hypothesis supported all areas of reading, including reading comprehension. More specifically, the authors found that struggling students who received TRI significantly outperformed students from control schools. Additionally, the main finding from this study supported the effectiveness of using laptop computers and webcam technology to help deliver the TRI program. Although the technology used in this study was perceived to be a contributing factor to student reading success, the authors indicated that a closer look into the efficacy of webcam technology compared to face-to-face instruction might be important to future research. This study provides support in using computer-assisted technology to deliver reading intervention to struggling reading students.

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Biggs, M. C., Homan, S. P., Dedrick, R., Minick, V., & Rasinski, T. (2008). Using an interactive singing software program: A comparative study of struggling middle school readers. *Reading Psychology*, 29(3), 195-213.
doi:10.1080/02702710802073438

The authors in this qualitative study used singing software called Carry-a-Tune (CAT) to analyze its use for singing and as a reading intervention for struggling middle school students. The CAT software was originally developed to teach users to sing in tune and in rhythm; however, because the software involves a repeated reading format, it was used in this study to determine its effect on student comprehension and reading achievement. A total of 24 students from a rural Florida middle school in Grades 7 and 8 utilized the software program for 30 minutes, 3 times a week for nine weeks. The author's findings indicated that the use of CAT showed improvement in both comprehension and instruction. The findings also suggest that more research into the effects CAT has on fluency is needed to indicate a significant difference. The significant findings of this study suggest that further investigation should be completed with a larger population of students using the CAT software to determine its true effect size. This study provides data and research design model, which can be used to guide future research.

Cabrera-Lozoya, A., Cerdan, F., Cano, M.-D., Garcia-Sanchez, D., & Lujan, S. (2012). Unifying heterogeneous e-learning modalities in a single platform: CADI, a case study. *Computers & Education*, 58(1), 617-630. doi: 10.1016/j.compedu.2011.09.014

In this quantitative study the authors presented a web-based framework for the creation, development, and implementation of learning environments that tested a group of senior college students, and used to promote active learning on any WiFi compliant device. In a thorough literature review of the different forms of e-learning, the authors

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determined that there are few e-learning systems serving to provide generic educational principles in a specific e-learning platform. The author's main suggestion identifies the importance to establish a real-time teaching platform between a teacher and student. In this study, the goal was to increase students' participation and to evaluate the impact of a higher interactive learning environment in terms of student academic performance. A one-factor ANOVA was performed, and three elements were determined to significantly improve students' grades; scores regarding short questions, scores for problem solutions, and the final score such helped the authors determine the use of the framework to establish a learning methodology to improve student academic performance. Additionally, this study supports the need to continue researching the effects of computer delivered learning environments on student learning outcomes.

Cheung, A. A., & Slavin, R. R. (2013). Effects of educational technology applications on reading outcomes for struggling readers: A best-evidence synthesis. *Reading Research Quarterly*, 48(3), 277-299. doi: 10.1002/rrq.50

The authors of this literature review analyzed the effectiveness of educational technology applications in improving the reading achievement of struggling readers in Grades K-6. Of all the research reviewed, only 20 studies met the author's criteria for inclusion in this study. The authors found that 13 studies used an experimental design, and the 7 additional studies were quasi-experimental designs. Intervention programs were found to vary from 25 minutes to 450 minutes per week. The educational technology applications reviewed were tutorial applications that used small-group interactions closely integrated with reading curriculum. The authors reported that these educational technology applications produced positive, but unexceptional effects on the

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reading skills of struggling readers compared to that of traditional face-to-face instruction. Comprehensive reading intervention models, such as READ 180 and Read About did not produce meaningful positive effect sizes ($ES = +0.04$). Additionally, the overall findings suggested similar results, indicating that educational technology applications produced positive but modest effect sizes ($ES = +0.14$) in comparison to traditional classroom instruction. It should be noted that only studies with quantitative measures of reading were included. The authors reported that a deeper insight into the effects of educational technology applications with struggling readers can be learned from other non-experimental studies such as qualitative and correlational research. The research findings in this study are important to future research because it underscores the potential benefits of using computer-assisted technology with struggling primary students.

Chyung, S. Y., & Vachon, M. (2005). An investigation of the profiles of satisfying and dissatisfying factors in e-learning. *Performance Improvement Quarterly*, 18(2), 95-113. Retrieved from <http://search.proquest.com.proxy1.ncu.edu/docview/218512744?accountid=28180>

The purpose of this study was to conduct a theory-based investigation created to detail student profiles of satisfying and dissatisfying factors in online learning programs. The theoretical framework chosen was based on Edward Lee Thorndike's law of effect that reported that animals will form a bond with something based on consequences if the behavior expressed is satisfying then the bond is strengthened. Conversely, while a behavior might be annoying the bond tends to be weakened. Another measure of the author's theoretical framework was Frederick Herzberg's motivation-hygiene theory,

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which stated that certain factors contribute to student satisfaction, and other hygiene factors may contribute to online dissatisfaction. The authors conducted a content analysis study focusing on building theory and guidelines from course evaluation data of 17 online learning courses. After data analysis of qualitative input, 19 categories were originated. Categories were prioritized based on student emphasis on whether the category was a satisfying factor, or a dissatisfying factor. The most frequent satisfying factors were student learning oriented. The most frequent dissatisfying factors were impending assignment deadlines, lack of instructor engagement, and poor student goal setting. This study highlights the importance of course evaluation and the impact attention to these results has on student satisfying factors in an online course program.

Fälth, L., Gustafson, S., Tjus, T., Heimann, M., & Svensson, I. (2013). Computer-assisted interventions targeting reading skills of children with reading disabilities - a longitudinal study. *Dyslexia (Chichester, England)*, 19(1), 37-53.
doi:10.1002/dys.1450

The purpose of this study was to analyze the effects of three computerized reading intervention programs on students with reading disabilities in second-grade. The authors analyzed the effects of both single-component and multi-component reading interventions using computer-assisted technology. Additionally, the interventions utilized three different types of computer-assisted reading intervention programs: phonological, reading comprehension, and non-world reading. A total of 130 second-grade students with reading disabilities comprised five different focus groups; one group of students received a reading intervention focused on improving word decoding skills and phonological abilities; the second focused on word and sentence levels; and the third was a combination of the two. The fourth group received traditional face-to-face

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classroom reading instruction and a fifth group of students served as the control group with age-matched typical readers. The authors found that all groups improved their reading skills, with the group who received a combination of both reading intervention programs showing greater improvement compared to the face-to-face and typical readers groups. The results demonstrated significant gains in decoding, reading comprehension, and non-world reading skills, which are achieved by intensive phonological and reading comprehension computer-assisted technology. Due to randomization of students assigned to intervention groups, the study was not designed to match students' specific reading needs to specific interventions. Additionally, the small size of the sample groups allowed for some flexibility for planning and selection of reading activities. The results of this study suggest that computer-assisted reading intervention programs have a positive effect on increasing students with reading disabilities reading skills.

Fisher, D., & Frey, N. (2014). Close reading as an intervention for struggling middle school readers. *Journal Of Adolescent & Adult Literacy*, 57(5), 367-376.
Retrieved from
<http://onlinelibrary.wiley.com.proxy1.ncu.edu/doi/10.1002/jaal.266/pdf>

The purpose of this study was to determine whether an intervention program employing a Close Reading strategy would result in higher state achievement scores and increase student literacy. The study was designed to include three schools comprising of 438 students in Grades 7 or 8 who met an unspecified inclusion criteria. The authors found that student achievement scores on the state assessment had no significant difference between the control and experimental groups ($t = 1.66, p < .10$). The authors noted that there was a significant difference related to attendance, finding that students in the close reading group averaged 94% attendance compared to 81% attendance in the

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control group ($X^2 = 46.76$, $p < .01$). Additionally, a Reader Self-Perception survey, which focused on four factors – progress, observational comparisons, social feedback, and physiological states – was given at the beginning of the study and found no significant difference. However, at the end of the study the survey results were statistically significant ($t = 1043$, $p < .001$). The largest difference between the groups was the factor of progress, with the close reading group averaging 4.02 (on a scale of 1-5), compared with the 2.31 for the control group. This study offers support that a reading intervention program is significantly more effective than traditional face-to-face only reading instruction.

Fletcher, J. D., Tobias, S., & Wisher, R. A. (2007). Learning anytime, anywhere: Advanced distributed learning and the changing face of education. *Educational Research*, 36(1), 96-102. doi:10.3102/0013189X07300034

In this article the authors introduced the Advanced Distributed Learning (ADL) initiative, designed to make learning online accessible anywhere. The ADL framework consists of learning opportunities that are instructional materials that meet specific specifications: accessible, interoperable, durable, and reusable. Currently, the number of instructional materials associated with ADL is in excess of 10 million and range in course length. The authors identified a number of research opportunities that should be considered regarding ADL, including the affects of web-based learning and the need to link learning models with specific student learning needs. The authors reported a need for technology-integrated instruction, showing that based on affordability and cost-effectiveness, learning online is cost effective globally accessible. The authors also presented several studies that showed that there is no difference between distance

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instruction and classroom learning, even though students prefer the latter. This article provides information supporting the educational value online learning has on student learning perceptions and student learning performance or achievement.

Graf, S., & Kinshuk, K. (2006, December). Considering learning styles in learning management systems: Investigating the behavior of students in an online course. *Semantic Media Adaptation and Personalization*, 25-30. Retrieved from http://wit.at/people/graf/publications/graf_kinshuk_SMAP06.pdf

Learning Management System (LMS) have proven very successful in the field of online learning education. However, there is a gap in online course development, which excludes any attention to individual student learning styles. The purpose of this study was to identify specific learning styles related to LMS and the successful completion of online courses. The authors reported in the research that student learning styles within the LMS framework was the main focus of the study, in order to do this consideration to student behaviors while enrolled in an online course program should also be investigated. The authors analyzed the behavior of 43 students based on predetermined learning styles and foreseen patterns of human behavior. The stated problem indicated that when learning styles in an educational environment, classroom or online are not considered in the development of LMS low student completion rates increase. The performed study aimed to address two issues: firstly to determine whether students with diverse learning styles act differently in online courses and which learning styles prove to be more helpful to poses for students in an online learning program, and secondly to investigate the relationship between the learning style preferences and student behaviors during online course participation. Researchers found that there were several patterns of student behaviors significantly correlated to online learning styles and the successful completion

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(or non completion) of online learning programs. The authors suggested that future studies be conducted to gather more information about the correlations of learning styles and behavior. It is also noted that this information can be used to determine the best approach in identifying specific learning styles of students in LMS.

Huang, E. Y., Lin, S. W., & Huang, T. K. (2012). What type of learning style leads to online participation in the mixed-mode e-learning environment? A study of software usage instruction. *Computers & Education*, 58(1), 338-349.
doi:10.1016/j.compedu.2011.08.003

The authors extended previous research by testing a model that analyzed the mediating process of prior knowledge in the relationship between learning style and e-learning performance. They hypothesized that learning style is positively related to online participation that online participation is positively related to e-learning performance, and the greater the prior knowledge, the stronger the relationship between online participation and learning performance. The authors measured the learning style of 219 college students in a single course by measuring (a) student learning style using the ILS, (b) student online participation, (c) student performance, (d) prior knowledge of the tool used in the course, and (e) the control variables of gender, computer experience, and internet experience. Support was found that online participation is a mediating construct between learning style and performance; further the study found that sensory learning styles individuals tend to participate only more frequently and for a longer duration; while prior knowledge was shown to moderate the relationship between participation and learning performance only in terms of passive participation. Several recommendations were made by the authors that included: an acknowledgement that it is difficult to determine the degree of influence of interceding theories in educational

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institutions that desire to increase student online participation, that most learners appeared to immediately benefit from online learning experiences, and the authors also commented on several suggestions for further research study. The authors identified three gaps in the field of study: (1) the model needs to be tested in different subject contexts, (2) additional mediating processes that link learning styles and learning performance should be explored, and (3) a more mature, professional, and autonomous set of online students should be enlisted.

Irvin, M. J., Hannum, W. H., de la Varre, C., & Farmer, T. W. (2010). Barriers to distance education in rural schools. *Quarterly Review Of Distance Education*, 11(2), 73-90. Retrieved from <http://eds.b.ebscohost.com.proxy1.ncu.edu/eds/pdfviewer/pdfviewer?sid=6bc27c6c-be10-465c-93bc-80af03e3b6f6%40sessionmgr115&vid=1&hid=103>

The^[49] purpose of this study was to analyze barriers of using distance education in rural schools. A national survey of 417 randomly selected, low-income, rural school systems in the United States was conducted and guided by these specific aims: the relationship between districts, the association between districts and course offerings, the relationship between delivery formats, and to examine^[50] the relationship between course completion and students' satisfaction with distance learning, and any barriers to overcome. The study used a telephone survey entitled the Rural Distance Education Survey (RDES). The rural school districts that were randomly selected qualified for the 2004-2005 Rural Education Achievement Program (REAP). These school districts typically have fewer than 600 students and a county with fewer than 10 people per square mile. The survey was developed by research staff to measure several types of barriers related to online learning in rural school districts and was administered by trained

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interviewers (pp. 77-78). The survey questions asked school administrators or other qualified staff to identify barriers to online learning to which their district had experienced. The frequency of barriers encompasses thirteen ranked barriers from four separate categories. 67.7% of respondents indicated that the primary barrier was a lack of curriculum requirements using online learning methods. 63.7% of respondents indicated that there was a lack of funding by the school district to support distance learning. And finally, the least number of respondents, at 7.4%, indicated that an insufficient connectivity was the least barrier experienced. In addition, rural schools often face shortages of teachers, especially in high-level courses such as chemistry, physics, calculus, etc. For the most part, rural schools may only have a small percentage of their student body interested in taking such courses, so hiring a full-time teacher in many cases is not financially feasible. Online learning can alleviate the problem of maintaining faculty and staff onsite. Research has revealed students who learn through technology, including distance education; typically have learning outcomes at least as good as students who learn through face-to-face instruction. Subsequent research may focus on determining the impact of distance education on a broader range of students including minority groups and specific personnel. Another aspect may be to study ways to prepare students to be better prepared online learners. The results from this study support conclusions from other studies however, ongoing studies should be conducted with various measurement tools to help determine the benefit and considerable promise distance education may continue to provide.

Jin[51] Nam, C. (2012). Context and creativity: The theory of planned behavior as an alternative mechanism. *Social Behavior & Personality: An International Journal*, 40(4), 681-692. Retrieved from <http://eds.b.ebscohost.com.proxy1.ncu.edu/eds/pdfviewer/pdfviewer?sid=64a9ce21-708a-4b37-85bb-fdb7f8a2e92d%40sessionmgr113&vid=1&hid=103>

Creativity researchers identified intrinsic motivation as the most important prevailing process that describes the effects of contextual characteristics on individual creativity. In this study the authors attempted to explain the mechanisms through which the identifiable variables influenced the creativity of scholars. The literature reviewed drew on studies that used cognitive evaluation theories, which scholars have argued determine an individual's level of intrinsic motivation. The reviewed literature also indicated that scholars believed that intrinsic motivation is the antecedent of creativity. The purpose of this paper was to expand on the organizational creativity literature by developing and validating alternative processes on the basis of planned behavior theory (PBT). The author expected that creativity would be predicted by both student intentions and student perceived behavioral control related to creative performance or self-efficacy. The method used was an intervening process between context and creativity. This method tested longitudinal data collected from undergraduate management students and their instructors at the North American business school. The online course included 14 sections taught by 28 instructors with approximately 30 students. Data was collected at three different times during the course of the program with 386 students responding out of 430 students enrolled. This sample included a breakdown of gender and age distributions. The study found that intrinsic motivation offered an alternative intervening process to that presented originally in the literature currently available. Using the present findings of the study, the authors suggested that two TPB predictors significantly related

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to creativity, peer support and creative self-efficacy. The author notes that the present data collected and information shared the limitations of the study. The research design involved in the study should be interpreted with caution considering was valid and performed with fidelity however; it was composed of undergraduate management students, which according to the author raises concerns about the validity and accuracy of the data collected.

Kim, J. S., Capotosto, L., Hartry, A., & Fitzgerald, R. (2011). Can a mixed-method literacy intervention improve the reading achievement of low-performing elementary school students in an after-school program? Results from a randomized controlled trial of READ 180 Enterprise. *Educational Evaluation And Policy Analysis*, 33(2), 183-201. Retrieved from <http://dx.doi.org.proxy1.ncu.edu/10.3102/0162373711399148>

The authors of this *READ 180* study described an independent randomized controlled trial, which evaluated the efficacy of *READ 180 Enterprise* on measures of vocabulary, reading comprehension, spelling, and oral reading fluency. The authors also tested the efficacy of *READ 180* in an after-school program, which was designed to examine whether a more structured literacy program can generate greater gains than a less structured literacy instruction. The study participants comprised of students in Grades 4 to 6, 95% of whom scored basic or below on the Massachusetts Comprehensive Assessment System in language arts. The study was designed to include 4 days of after school instruction (2 hours per day) over 23 weeks. Three study goals were implemented to help determine intervention effects: (1) using an experimental design, impact estimates are generated from posttest-measures of vocabulary, reading comprehension, spelling, and fluency, (2) an examination into the effects of offering *READ 180* to upper elementary students compared by grade level, and finally (3) using random assignment to

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estimate the impact of the treatment based on student attendance rates. The author's found that there was a positive and statistically significant impact on student scores when using the *READ 180 Enterprise* program. Furthermore, *READ 180* students outperformed the district by an 8.43 increase on reading vocabulary and 9.66 increase on reading comprehension. Additionally, the authors found no significant impact on spelling or oral reading fluency scores with students in the *READ 180* groups. However, the authors do suggest that the findings indicated the *READ 180 Enterprise* program was far more effective for moderate risk students as apposed to students in the bottom quartiles. Finally, the authors note that the findings of this study were significantly different from their previous study (located just below), which found no significant effects in reading comprehension or vocabulary.

Kim, J. S., Samson, J. F., Fitzgerald, R., & Hartry, A. (2010). A randomized experiment of a mixed-methods literacy intervention for struggling readers in grades 4-6: Effects on word reading efficiency, reading comprehension and vocabulary, and oral reading fluency. *Reading & Writing*, 23(9), 1109-1129. doi: 10.1007/s11145-009-9198-2

The purpose of this study was to analyze the casual effects of *READ 180* on measures of vocabulary and oral reading fluency. Additionally, the study analyzed whether print exposure among students participating in the *READ 180* program explained variances in posttest reading scores. The study included two groups of students, totaling 294 in Grades 4 to 6, who were randomly assigned to either the *READ 180* or less structured district after-school reading program. Each program was implemented for four days a week over 23 weeks lasting 60 minutes each day. Given these confounds the authors found no statistically significant difference between students participating in the

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READ 180 program and the less structured after-school reading program on pretest measures of word reading efficiency, reading comprehension and vocabulary, and reading fluency. Additionally, there were no statistically significant differences in student achievement scores between students who took the pretests and posttests ($M = 90.66$, $SD = 11.39$). The modified 60-minute version of *READ 180* serves as a study limitation because it did not include whole-group lessons for building vocabulary, which the authors reported to be critical to enhancing the efficacy of the intervention program. Furthermore, the less structured after-school program included literacy activities that may have promoted gains in word reading efficiency and comprehension. This study, as well as the study immediately above, provides insight into the effects of a *READ 180* intervention program focusing on specific literacy skills.

Little, C. A., McCoach, D. B., & Reis, S. M. (2014). Effects of differentiated reading instruction on student achievement in middle school. *Journal Of Advanced Academics*, 25(4), 384-402. doi:10.1177/1932202X14549250

The purpose of this study was to determine to what extent the regular reading curriculum could be replaced without adversely affecting scores on standardized assessments of reading fluency and comprehension. Additionally, the authors analyzed the performance of middle school students who participated in the reading intervention group compared to the control group students on measures of fluency and comprehension. This experimental study analyzed the effects on student achievement of an instructional approach, which included: student choice, differentiated instruction, and extensive independent reading delivered through a reading only intervention program. The study, conducted across four middle schools with 2,150 sixth- to eighth-grade

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students and 47 teachers, which incorporated a cluster-randomized design. Pretest and posttest data were collected on students' reading fluency and comprehension. The author's findings demonstrated that the reading intervention program resulted in similar results overall, compared to the control group. Furthermore, study results showed the reading intervention group outperformed the control group on reading fluency at two of the schools and similar results for comprehension, despite the diminished direct instruction provided in the intervention groups as compared with regular reading classes. This study demonstrated that considerable instructional time could be replaced with independent reading support without significantly decreasing student achievement in reading. The authors note that there was a wide range of fidelity of implementation across 47 classrooms, which raises the question of whether greater fidelity to the intervention program would generate significantly better results.

McBrien, J., Jones, P., & Rui, C. (2009). Virtual spaces: Employing a synchronous online classroom to facilitate student engagement in online learning. *International Review Of Research In Open & Distance Learning*, 10(3), 1-17. Retrieved from <http://eds.b.ebscohost.com.proxy1.ncu.edu/eds/pdfviewer/pdfviewer?sid=f98cc079-a1c1-4754-b93f-94c559c0b6f4%40sessionmgr113&vid=1&hid=103>

The focus of this study was to identify effective online learning environments using transactional distance theory while operating using a theoretical framework to explore the role of online learning spaces and assisted technologies utilized by special education students. The authors of this article reported on themes, which contribute to reducing the barriers of online learning students experience and spoke to the importance of developing quality online learning environments in distance education for students with learning disabilities in higher education. Many universities and colleges in the

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United States offer online degree programs, which give students from around the world the opportunity to participate in higher education programs from the comfort of their homes: this is especially important for those students with disabilities that prevent them from extensive mobility. The authors of the study asked two main questions of their participants with varying degrees of the questions asked. The first main question asked if synchronous online environments increased student perception of social interaction and did this opportunity increase their desire to participate in an online learning program. The second question asked for participants to identify specific strengths and weaknesses of the current availability of synchronous online learning environments. Participants in the project study were enrolled in three undergraduate and three graduate online courses in the College of Education at the University of South Florida. The method used for sampling was opportunistic and required students to have a disability to participate and invited them to participate in the evaluation of the course without mandating its requirement. Students' comments on the surveys appeared to suggest that comfort and student engagement were the most important with only 9% indicating a negative affect from student social interactions. The majority of the comments were positive and suggested that insufficient social interaction in online learning programs, in regards to special education students, might attribute to an decrease in student completion and online enrollment in distance education.

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McCarthy, M. (2010). Experiential learning theory: From theory to practice. *Journal of business and Economics Research*, 8(5), 131-139. Retrieved from <http://online.dimitra.gr/sektrainers/file.php/1/MartinDougiamas.pdf>

The authors summarized the interpretive data in this paper to understand and represent the learning experiences of students participating in a Moodle course. The author reported that a postgraduate online course called “Constructivism” held at Curtin University of Technology, for teachers engaged in professional development through distance learning. The defined goals of this course included learning about constructivism, self-reflection of their own learning, and learning collaboratively. The course was developed using an online open source web program called a Moodle, developed by one of the authors. The intended goals of this study were to improve the quality of the postgraduate course and improve the ability of Moodle as a tool to create effective online courses. This particular study outlined in this paper is part of an ongoing research program. The authors’ key question addressed in this paper is: How can internet applications successfully support constructionist epistemologies of quality teaching and effective learning. The research study employed an interpretive research methodology with elements of participatory action research, virtual ethnography, and internet application design. The total number of students who participated in the Moodle is not known however; the authors indicated that eight students consented to the research study. The Moodle course was developed to last over a 14-week period. The authors reported that besides the survey data collected, 150,000 words were typed and close to 20,000 log entries were recorded demonstrating an action taken by each of the eight participants. At the conclusion of the Moodle course the authors indicated that the student evidence collected suggested the online course was successful in achieving the three learning goals

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originally set. This study highlights the work conducted by two researchers in their effort to explore, develop, and improve online learning communities and learning environments.

Papalewis, R. (2004). Struggling middle school readers: Successful, accelerating intervention. *Reading Improvement*, 41(1), 24-37. Retrieved from <http://eds.a.ebscohost.com.proxy1.ncu.edu/eds/pdfviewer/pdfviewer?sid=bfb0b10a-245b-4061-97c5-5974873ecdba%40sessionmgr4001&vid=1&hid=4105>

The focus of this study was to evaluate the impact of a reading intervention program, *READ 180*, on repeating students in Grade 8 in a large urban inner city school district. The author used 2-years of Reading and Language Arts normal curve equivalent scores (NCE scores) from the district's eighth-grade student population (n=622) to determine student participation. Compared to the control group, students who received *READ 180* intervention made significant gains of over 3 NCEs ($p < .05$) in Reading and almost 2 NCE's ($p < .05$) in Language Arts taken from the state assessment. Although the study showed that the overall district's percentile ranks remained significantly unchanged, the *READ 180* students gained 4% in Reading and 3% in Language Arts. This study provides a framework for similar research to be conducted into the effectiveness of the computer-assisted *READ 180* intervention program. In fact, the intervention design, student selection process, teacher training checklist, and evaluation procedures are outlined in this study providing future research with noteworthy data and design elements to be used to validate extended research.

Parker, C. A., Holland, G., & Jones, D. (2013). The effectiveness of two reading intervention programs in a south texas urban school district. *National Forum Of Applied Educational Research Journal*, 26(3), 1-9. Retrieved from <http://eds.a.ebscohost.com.proxy1.ncu.edu/eds/pdfviewer/pdfviewer?sid=e9ce62e5-eb89-483c-a199-f51e4356e99e%40sessionmgr4003&vid=1&hid=4105>

The authors of this study analyzed two intervention programs, *READ 180* and *Voyager Journeys III*, in a south Texas urban school. Student participants were composed of ninth-grade students who were placed in reading programs based on their Texas Assessment of Knowledge and Skills (TAKS) state achievement scores. Students who fell below 2100 on the TAKS were placed into one of 2 tier-2 intervention programs, *READ 180* or *Voyager Journeys III*. The purpose of the study was to determine the more effective reading program as measured by the 2010-11 Scholastic Reading Inventory (SRI). Additionally, the authors compared the student TAKS achievement scores of ninth-grade students enrolled in the *READ 180* program compared the those of ninth-grade students in the *Voyager Journeys III*. The findings suggested that there was no conclusive evidence to support either reading intervention program. The authors contribute the study results to the variables that could have affected the outcomes of the analysis, such as sample size, circumstantial events, student attendance, and fidelity to the programs. The outcome of this research can be used as a framework to conduct other studies that explore the effectiveness of reading intervention programs like *READ 180*. This research provides supporting information, which can add to future studies investigating comparisons of other reading intervention programs.

Patterson, B., & McFadden, C. (2009). Attrition in online and campus degree programs. *Online Journal of Distance Learning Administration*, 12(2). Retrieved from <http://www.westga.edu/~distance/ojdla/summer122/patterson112.html>

The purpose of this study was to analyze how the mode of instructional delivery, traditional or online, affected attrition rates of students' academic characteristics. The authors conducted a quantitative study, which analyzed the academic characteristics of students seeking a master's degree in Business Administration or Communications Sciences and Disorders. The study was conducted between 2002 and 2004 at a national research university in southeastern United States. Academic variables of the study explored were program implementation, undergraduate grade point average, graduate grade-point average, admission test scores, and number of online courses completed successfully. The increased growth of informational technologies and e-learning has been met with questions of quality of online learning environments and instruction. The authors indicated that the study showed evidence that high attrition rates for online courses were often higher than for traditional classroom courses. Additionally, the authors noted that it was observed that non-traditional students were reported to have lower retention rates in online courses than traditional aged students and conversely traditional aged students showed a lower retention rate in traditional classroom environments over non-traditional students who showed evidence of having more success in a traditional classroom. In the study, the dichotomous criterion variable was student persistence and the predictor variable was the student's age. At the conclusion of the study, the authors reported that there was a much higher attrition rate among students enrolled in the online master's degree program than students enrolled in the comparable classroom based format. The findings in the study should be interpreted with caution and

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are limited by several factors: (a) the study population is limited to graduate students enrolled in a specific degree program, (b) the students in the study were self-selected, (c) participants in the study were pre-selected, and (d) the interpretation of the data collected is limited to census data. Additionally, the authors concluded from the findings seemed to indicate that pre academic performance may have a greater influence on the persistence of students enrolled in and who successfully complete online course programs.

Roberts, G., Vaughn, S., Fletcher, J., Stuebing, K., & Barth, A. (2013). Effects of a response-based, tiered framework for intervening with struggling readers in middle school. *Reading Research Quarterly*, 48(3), 237-254. Retrieved from <http://dx.doi.org.proxy1.ncu.edu/10.1002/rrq.47>

The authors of this multiyear, response-based, tiered intervention, randomized study for struggling readers in Grades 6 to 8 sought to analyze the effects of a three-year intervention program on remediation of reading difficulties. There were 419 students, identified as struggling readers, from 7 middle schools participated in the study using the Texas Assessment of Knowledge and Skills (TAKS) reading scores. The reading intervention program included 278 students and 141 students were assigned to traditional face-to-face reading instruction. The author's found, after three years, the data suggested that many struggling middle school students might require more than nine months of reading intervention to show significant gains over comparable students. Additionally, the authors found that students in the reading intervention group had significant gains compared to students receiving traditional face-to-face reading instruction. Ultimately, the authors of this study concluded that a response-based model for supporting reading achievement of at-risk students appears to benefit middle school participants. However,

ongoing research should be considered for providing intervention with fidelity while maintaining capacity for its effective use.

Samruayruen, B., Enriquez, J., Natakatoong, O., & Samruayruen, K. (2013). Self-regulated learning: A key of a successful learner in online learning environments in Thailand. *Journal Of Educational Computing Research*, 48(1), 45-69. Retrieved from <http://eds.a.ebscohost.com.proxy1.ncu.edu/eds/pdfviewer/pdfviewer?sid=f7711ad7-aba8-4f45-91e7-d770f4f564a2%40sessionmgr4005&vid=2&hid=4105>

The purpose of this study was to identify five effective self-regulated learning (SRL) characteristics. The study included 88 Thai learners who completed a developed SRL survey, which was adapted from a MSL questionnaire. The authors reported that there were a number of different theoretical views of self-regulated learning that might help describe the ideas and constructs of online learning environments. This^[52] study was focused using Zimmerman's Cyclic Phase Model and Pintrich's Conceptual Framework for SRL. Zimmerman's self-regulated learning model consists of three main factors: the person themselves, their behavior, and their environment. Zimmerman's self-regulated learning model factors are shown in the study to interact with each other in a cyclical way. Pintrich's Conceptual Framework for SRL consisted of four unique phases: (1) planning and goal setting, (2) monitoring, (3) effort to control and self-regulate, and (4) reaction and reflection. Each phase focused on an important aspect of online learning and academic achievement. In this study, the research participants were taken from current Thai undergraduate and graduate students over the age of 18 years. These eighty-eight participants were enrolled in online courses and blended e-learning offerings. An online web survey system called "Kwik Surveys," was used to collect information about student behaviors in online learning environments. This group consisted of 35% doctoral

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students, 32% master, 26% certification, and 7% students enrolled in undergraduate studies. Among this group of Thai students there were 48 male students and 40 female students each participating in an online course program. The findings reported by the authors indicated that there was an overall correlation between student motivation and self-regulated strategies, which helped determine successful online learning and course completion. The authors note that the evidence from this study supported Pintrich's findings that motivational components were linked to student engagement and that intrinsic value was strongly related to strategies of self-regulation in on online course programs. This article cautions against the data collected related to test anxiety as the author points out that several questions associated with test anxiety were in fact not directly related to test anxiety.

Solis, M., Miciak, J., Vaughn, S., & Fletcher, J. M. (2014). Why intensive interventions matter: Longitudinal studies of adolescents with reading disabilities and poor reading comprehension. *Learning Disability Quarterly*, 37(4), 218-229. doi: 10.1177/0731948714528806

The authors of this article described a study by Roberts, Vaughn, Fletcher, Stuebing, and Barth (2013^[53]), which analyzed a series of longitudinal studies utilizing a response to intervention framework. Students were selected based on reading comprehension scores in Grade five and then randomly assigned in Grade 6 to intervention or comparison groups. Students received intervention for 1, 2, or 3 years based on response to instruction in each preceding year. These findings indicated sixth-grade students outperformed comparison students with statistically differences on measures of word reading ($d = 0.15$), word attack ($d = 0.15$), reading fluency ($d = 0.19$), and reading comprehension ($d = 0.19$). The authors, however, reported that the effect

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size was not statistically significant among the small or large group interventions. Year 2 findings addressed the efficacy of Tier 3 intervention for students who inadequately responded to Tier 2 intervention. Students receiving Tier 3 intervention received individual or standardized remediation, neither of which demonstrated statistically significant difference for reading comprehension compared with students in the control group ($d = .52$, individualized vs. control; and $d = .56$, standardized vs. control). However, there were noted differences between the two intervention groups when compared with the control group on measures of word reading, word attack, fluency, and spelling. Finally, year 3 addressed the effects of long-term intervention for eighth-grade students who responded inadequately to the preceding 2 years of intervention. The authors reported that the findings suggested that without continued remedial instruction, struggling middle school readers would continue to fall further behind the state's reading achievement performance expectations and would require ongoing reading intervention.

Taylor, R., & Watson, R. (2013). Raising rigor for struggling readers. *Principal Leadership*, 14(2), 56-59. Retrieved from http://www.nassp.org/tabid/3788/default.aspx?topic=Raising_Rigor_for_Struggling_Readers

The authors of this article reported the increasing need for rigorous reading tasks to help struggling readers improve reading skills. The authors described teaching and learning observations, which indicated a strong need for more rigorous reading intervention tasks. The authors presented several challenges for teachers of non-proficient readers: inconsistent progress towards independent reading levels and proficiency, inconsistent comprehension and proficiency definitions, which requires low level thinking tasks, lack of teacher expertise in using higher-level instructional tasks, and

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teachers' beliefs about student reading capabilities. From these classroom observations, the authors identified four steps that might help teachers enhance rigor for middle and high school non-proficient readers: scaffolding instruction, on-grade-level parallel texts, rigorous learning tasks, and benchmark assessments. The authors suggested that together, the four steps create a systematic approach to enhancing rigor to improve reading skills. This article underscores the need to utilize a consistent and rigorous reading intervention program, which will provide struggling middle school students with higher-level reading mediation.

Vaughn, S., Wexler, J., Leroux, A., Roberts, G., Denton, C., Barth, A., & Fletcher, J. (2012). Effects of intensive reading intervention for eighth-grade students with persistently inadequate response to intervention. *Journal Of Learning Disabilities*, 45(6), 515-525. Retrieved from <http://dx.doi.org.proxy1.ncu.edu/10.1177/0022219411402692>

The purpose of this yearlong, small group, intensive reading intervention study was to analyze the effects of intervention provided to students in Grade 8 who had demonstrated inadequate responses to intervention during the preceding two school years. This study serves as an extension to a previous study, by some of the same authors, which focuses on the effective practices for intervening with students who are poor responders to effective research supported interventions. The authors of this study compared the results of eighth-grade students who had participated in two previous years of interventions with students in a comparison group. The findings suggested that eighth-grade students who had consistently responded inadequately to two previous years of intensive reading interventions scored significantly higher than those students in the comparison group. This study reveals possible concerns about continued reading

interventions and the risk that ongoing intensive reading interventions beyond middle school grades might not be beneficial and may even detract from content learning in high school. The participant group in this study is small, which is likely to be noteworthy for future studies investigating reading deficits using small population effective sizes.

Vernon-Feagans, L., Kainz, K., Hedrick, A., Ginsberg, M., & Amendum, S. (2013). Live webcam coaching to help early elementary classroom teachers provide effective literacy instruction for struggling readers: The Targeted Reading Intervention. *Journal Of Educational Psychology, 105*(4), 1175-1187. doi:10.1037/a0032143

The authors of this study evaluated whether the Targeted Reading Intervention (RTI) professional development program, delivered through webcam technology, could provide rural North Carolina classroom elementary teachers with the instructional skills needed to help struggling readers increase student reading skills. A total of fifteen elementary schools were randomly assigned to the treatment or control conditions. A total of 75 classrooms and 631 students participated in the study with each class providing intervention to five randomly selected struggling readers and five randomly selected at grade-level readers. The intervention was provided in one-on-one sessions for 15 minutes a class period until the struggling reader made reading progress. The teacher then moved on to another struggling reader until all five students received the RTI during the school year. This study largely focused on the biweekly webcam coaching session between the intervention coach and teacher, which allowed for immediate feedback and coaching to be given to the teacher and student in real time. Despite the use of webcam technology for purposes of delivering coaching and feedback for reading intervention, results suggested that struggling readers were gaining at the same rate as the non-struggling readers, but were not closing the gap between the two condition groups.

Walcott, C. M., Marett, K., & Hessel, A. B. (2014). Effectiveness of a computer-assisted intervention for young children with attention and reading problems. *Journal Of Applied School Psychology, 30*(2), 83. doi:10.1080/15377903.2013.874389

The purpose of this single-subject, across-participants design, was to analyze whether a computer-assisted reading intervention program increases performance for students with early reading problems. The participants of this study were three first-grade and three second-grade struggling readers who demonstrated significant inactiveness. The independent variable was a computer-assisted intervention (CAI), *Earobics*. The research included the dependent variables: fluency, phonemic segmentation, and attention-to-task. The authors reported results that indicated evidence of reading gains; however, there were more significant results found for all students, which indicated that attention-to-task was higher during CAI than during small-group reading instruction. The authors suggest that CAI approaches might be a viable option for improving reading skills in elementary aged students who struggle with inattentiveness. Despite the potential of CAI, the authors note that few studies have investigated its effectiveness with inattentive students. However, a review of the literature found that a CAI drill and practice mathematics program produced significantly more learning outcomes than did traditional classroom instruction. This study serves as evidence that a computer-assisted approach to learning is significantly more effective at providing intervention than is traditional classroom intervention.

Williams, E. (2014). Breaking the barriers to reading success in middle and high schools. *Reading Improvement*, 51(2), 233-236. Retrieved from <http://eds.a.ebscohost.com.proxy1.ncu.edu/eds/detail/detail?sid=92c60bb5-c846-47f0-b746-52e7bc5cf861%40sessionmgr4004&vid=2&hid=4105&bdata=JnNpdGU9ZWRzLWxpdmU%3d#db=ehh&AN=97105089>

The purpose of this article was to report challenges minority students face when striving to increase reading achievement in schools where most teachers are non-English teachers. The author reported strategies that are successful in middle and high schools have implemented to help break through the reading barriers that once prevented student achievement. The author provides two strategies for overcoming the reading barrier in minority students: Sustained Silent Reading (SSR) and trade books (leveled readers). Sustained Silent Reading (SSR) requires schools to set aside a purposeful reading time where students self-select appropriate and interesting reading level books. Trade books are rich in narrative and informational content and vary in reading levels. Unlike textbooks, trade books can be very effective at motivating poor or reluctant readers to engage in sustained reading. Additionally, in order to ensure fidelity among all teachers implementing the strategies teachers must be exposed to professional staff developments, as well as classroom-based coaching. The author reported that a middle school that implemented the school-wide reading focus, and provided ongoing teacher support, saw significant improvements in students' reading achievement. This discussion and evaluation is becoming increasingly important, given the most schools around the nation are beginning to implement Common Core like state standards, which require students to read a variety of text in all subjects.

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Whitford, S. (2011). READ 180: Policy gone wrong. *Language Arts Journal of Michigan*, 26(2), 2-33. doi: 10.9707/2168-149x.1797

The author of this article reported personal and negative experiences adopting *READ 180* as the primary reading intervention program taught in her school district. The author reports that after several years implementing the *READ 180* intervention program, students she taught continued to struggle in reading. The author reported that the *READ 180* instructional model is prescriptive and rigid. According to the article, various studies prove that reading instruction should be student focused, engaging, and responsive. The author also reported that additional research shows a contradiction in the teaching methods of *READ 180* and the evidence that exists indicating the importance of multiplicity of individual differences every student brings to reading. Additionally, the author reported that although participants of the program consider some independent reading materials (leveled readers) provided by *READ 180* interesting, most titles lack student interest. In contrast, an earlier article by Williams indicated leveled readers were considered a valuable asset to providing intervention to students in Grades K-6. The author also reported the ineffectiveness of *READ 180*, indicating that it lacks authenticity, lacks student interest, promotes learning in isolation, is unhygienic, and instills in students the idea that reading is a solitary activity. Furthermore, the author discusses three important components for increasing student literacy: students should be given choice, reading opportunities must be authentic and meaningful, and struggling readers must perceive their learning environment as a cooperative and engaging space. This article provides a personal account of *READ 180* learning observations, which focuses on the need for increasing student literacy. *READ 180* is in fact primarily a skills based reading intervention program providing, which does not have a primary focus on

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increasing student literacy; however, does address literacy, indirectly, through the intervention model.

Wu, C., & Coady, M. (2010). 'The United States is America?': A cultural perspective on READ 180 materials. *Language Culture And Curriculum*, 23(2), 153-165. doi: 10.1080/07908318.2010.494732

The purpose of this article was to report the findings from a qualitative study that investigated how English Language Learners (ELL) responded using a READ 180 intervention program and discuss the implications for culturally responsive pedagogy and planning. The author described a theoretical framework for the study, which emphasizes the need to incorporate culturally relevant pedagogy (CRP) into educational practices and materials. The study discussed, used a qualitative research design to explore how ELL students in Florida perceived their cultural relevance of *READ 180*. Respectively, ELL students reported that *READ 180* software and model did not offer cultural knowledge or experiences. Findings from the study indicated that *READ 180* provided little cultural responsiveness through interactions and activities, but was unable to respond to unique cultural needs of ELL students. The data collected from the ELL students suggest that language learning lies in a teacher's ability to promote cultural diversity through language learning from multiple perspectives. The authors point out that it is highly desirable that teachers would strive to scaffold lessons and draw parallels with students' lives. This article is extremely important to future research because it underscores the need to consider demographics of participants when evaluating the responsiveness and effectiveness of a remedial intervention program such as *READ 180*. Analysis and discussion of research data could be skewed if demographic information of participants in

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both the treatment and control conditions are not considered as potentially important variables.